**ABSTRACT**

Background – Chyle fistula may occur after left neck dissections due to injury of the thoracic duct or its major branches. Despite being unusual, this complication carries a significant risk of morbidity and mortality. The purpose of this study was to describe a specific maneuver to actively detect and treat postoperative lymphatic fistulas.

**INTRODUCTION**

Chyle fistula may occur after neck dissections that include level IV, due to injury of the thoracic duct or of one of its major branches. Despite being unusual, this complication carries a significant risk of morbidity and mortality. The purpose of this study was to describe a specific maneuver to actively detect and treat postoperative lymphatic fistulas.

**METHODS**

From March 1989 to September 2009, 185 patients were submitted to neck dissections involving left level IV, and underwent IAC. There were 101 male and 84 female, with age ranging from 18 to 76 years old. There were 101 patients with squamous cell carcinomas, 48 with thyroid carcinomas, five with malignant melanomas and three with salivary cancers (two high-grade mucoepidermoid carcinomas and one poorly differentiated adenocarcinoma). The most frequent primary site was the hypopharynx (71 cases – 38.1%), followed by the larynx (60 cases – 32.3%), tongue (19 cases – 10.2%), and oropharynx (17 cases – 9.2%). The site of the dissected level IV area under clear visualization, an abdominal compression (IAC) was performed. At this moment, any ingurgitation of the intact thoracic duct, as can be observed in Figures 1 and 2. In our prospective non-randomized study involving 185 patients who underwent neck dissections involving left level IV, in eleven cases (5.9%), a chyle leak was detected after performing the IAC. Interestingly, this percentage is very similar to the 5.8% reported by another prospective study. All except two cases were successfully controlled after one attempt. In these two patients, a patch of muscle and fat was applied, with fibrin glue on the top. In one of these patients, another chyle leak in a different location was detected only at the second IAC, and was also effectively closed. Postoperatively, there were one (1%) subject with a thoracic duct injury, which was conservatively treated. The duct was surgically ligated at the end of the neck dissection.

**RESULTS**

In eleven cases (5.9%), a chyle leak was detected after performing the IAC (Figure 3). All except two were successfully controlled after one attempt. In these two patients, a patch of muscle and fat was applied, with fibrin glue on the top. In one of these patients, another chyle leak in a different location was detected only at the second IAC, and was also effectively closed.

**DISCUSSION**

Despite the relevance of this complication, to our knowledge no specific maneuver has been described to actively detect and treat lymphatic fistulas during neck dissections. The thoracic duct is described as the first branch of the aorta, under physiological pressure, to drain the lymphatic vessels of the upper extremities, head, neck, and thorax. Under pathological conditions, it collects lymphatic fluid under pressure from the lower limbs, lower thorax, and upper abdomen. In the retrosternal space, lymphatic fluid enters the thoracic duct, which then follows the superior vena cava or the left internal jugular vein to the heart. Postoperatively, there were one (1%) subject with a thoracic duct injury, which was conservatively treated. The duct was surgically ligated at the end of the neck dissection.

**CONCLUSIONS**

A chyle fistula at the end of a left neck dissection involving level IV. In this study, IAC was successful in identifying a chyle leak and in effectively controlling the leak, as well as to ensure its effective sealing in 85% of the open cases. Moreover, there were only two postoperative complications related to the IAC, one occurring in a patient with a thoracic duct injury, which was conservatively treated. The other patient was an at-risk patient due to the presence of a high-volume lymphatic fistula.

**REFERENCES**